Carotid and Neurovascular Intervention

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TCT-501

PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY AND STENTING OF EXTRACRANIAL VERTEBRAL ARTERY STENOSES

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Background: To evaluate the safety and efficiency of vertebral angioplasty and stenting (VAS) in symptomatic patients.
Methods: 102 angioplasties in 96 pts (M:72) mean age 68,3 ± 6,7 years (22-84) left 58. All pts had multivascular diseases: carotid (CA):63, subclavian (SA): 26, coronary:64…. Atheromatous lesions: 100, inflammatory: 2. Mean lesion length: 9,6 +/- 2,8 mm. Mean % stenosis 83.2 ± 7.7, mean arterial diameter : 4,8 ± 0,6 mm (4-6). 94 lesions at VO segment (ostium), 6 at V1 and 2 at V2 segments. Indications for angioplasty: dizziness (96), bilateral weakness (11), visual changes (11), diplopia (10), drop attacks (20), TIA (13), ataxia (5). A protection device (filter) used in 10 pts. 20 SA angioplasties performed at the same time of VAS, 8 CA. All angioplasties performed by femoral approach, 4 by brachial approaches after failure of femoral approach. (2 successes).
Results: Technical success 100/102 (98%). 6 lesions treated by angioplasty alone: 3 VO (first 3 pts. 2 V1, 1 V2 lesion). 1 pt (inflammatory disease) treated by cutting balloon alone. 93 lesions treated with stents (direct stenting: 78). Peripheral balloon expandable stents (n=23), self expandable stents (n=4 for 3 V1 and one V2 lesions). 70 coronary stents (14 DES). 1 pt developed a TIA during the procedure. No neurological complications at 30 days Clinical success 94/96 (98%) Post-procedure arterial diameter: 4,55 ± 0,8 mm (4-6). Mean residual stenosis 2,2 ± 3,5 %. In 10 pts treated with protection devices, visible debris removed in 7 (5 Filterwire, 2 Fibernet) with the same amount of debris as during Carotid Stenting) 7 pts (8%) developed a symptomatic restenosis during the follow-up (mean: 31.4.±28.9 months), 3 after PTA alone, 4 after PTA and stent (1 occlusion treated medically, 6 stenoses successfully treated with PTA). No restenosis after DES implantation at 1 year.
Conclusions: VAS can be performed safely and effectively with a high technical success rate, a low complication rate, a low restenosis rate and a durable clinical success in patients with symptomatic VA stenosis. Stents seem to improve immediate and long-term results. The role of protection devices and D.E.S has to be discussed

TCT-502

Carotid Stenting Versus Endarterectomy:10 Year Randomized Trial

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Background: Modern clinical trials with short-term follow-up indicate CAS and CEA are equivalent in reducing the risk for ipsilateral ischemic stroke secondary to carotid stenosis. A paucity of data exists regarding long term outcomes.
Methods: Patients with symptomatic and asymptomatic of all surgical risks with carotid stenosis (>70%) were randomly selected for CEA or CAS and followed a minimum of ten years.
Results: Long-term follow up was achieved in 173 patients (91%). Eighty-seven (50.2%) died within this period, most commonly of non-vascular causes. No differences in occurrence and/or risk of stroke ipsilateral to the treated artery was noted among treatment groups (p=0.61). Restenosis determined by sequential ultrasound was seen only in the CAS group (3.3%) and remained asymptomatic. The combined risk of fatal or non-fatal heart attack was highest in individuals with symptomatic compared to asymptomatic stenosis. (27.5% vs. 11.0%; p=<0.05)) and was higher in all patients treated with CEA (p=0.02).
Conclusions: Long-term protection against ipsilateral stroke provided by CAS and CEA is equivalent. The 10 year risk of fatal/non-fatal myocardial infarction is highest in all patients harboring symptomatic carotid stenosis at enrollment however the risks of fatal/non-fatal heart attack are much more prevalent in all patients, symptomatic and asymptomatic, randomized to CEA.

TCT-503

The Challenge of Left Internal Carotid Stenosis Stenting and Bovine Aortic Arch (BAAC):Systematic Right Radial or Brachial Approach in 60 Consecutive Patients

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Background: BAAC refers either to left common carotid artery (LCCA) origin from the innominate artery (type 2) or from a common origin from the aorta (type 1).When left internal carotid artery(LICA)stenosis is present,CAS from the femoral approach may be difficult, increasing the risk of technical failure and cerebral embolization.
Methods: Between 2007 and 2012, 60/505 (11.8%) consecutive pts with LICA stenosis and BAAC underwent CAS with cerebral protection from right radial or brachial approach. Type of cerebral protection (distal vs. proximal), stent (open vs. closed cell design) and technique (direct stenting vs. predilation) were left at operation's discretion. Double antiplatelet treatment was maintained up to 3 months after CAS. Procedural variables such as fluoroscopy time, radiation exposure, contrast medium and technical failure were compared to that of a comparable group of 13 pts with BAAC undergoing CAS by femoral catheterization.
Results: Type 2 BAAC was present in 86% of pts. The mean age was 73±9 years (>75 years, 45%).Male gender was 73%,75% had high-surgical-risk characteristics and 83% were asymptomatic. Radial or brachial approach was used in 54% and 46% of pts, respectively. Technical success was 98.3% (1 pt crossed over to femoral approach). Clinical success was 96.7% (1 retinal embolism and 1 minor stroke). Proximal protection (8FMO.MA) was used in 15 cases (11 brachial,4 radial) with 1 device failure (shift to filter) and 100% procedural and 100% clinical successes. Vascular complications occurred in 2/0 pts in the brachial/radial group, respectively. No major bleeding occurred. Fluoroscopy time (p<0.05),contrast medium (p<0.03), radiation exposure (p=0.08) and technical failure (1.6% vs. 16.6%,p=0.06) were reduced as compared to femoral catheterization.
Conclusions: CAS through right radial or brachial approach is safe and effective in pts with LICA stenosis and BAAC. Advantages over femoral approach include: avoidance of aortic arch, favorable anatomic pathway for LCCA cannulation, choice between two arterial accesses, use of proximal protection, low bleeding and vascular complication rates (especially from the radial approach) and early patients' ambulation.

TCT-504

Randomized comparison of transradial and transfemoral approach for carotid artery stenting

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Background: Limited data exist on radial access in carotid artery stenting (CAS). This multicenter prospective randomized study was performed to compare the outcome and complication rate of transradial (TR) and transfemoral (TF) CAS.
Methods: The clinical and angiographic data of 260 consecutive patients high risk for carotid endarterectomy (CEA) treated by CAS with cerebral protection between 2010 and 2012 were evaluated. Patients were randomized to TR (n =130) or TF (n =130) groups and several parameters were evaluated: Primary endpoint: MACCE, rate of access site complications. Secondary endpoint: angiographic outcome of the CAS, fluoroscopy time and X Ray dose, procedural time, cross over rate to another puncture site and hospitalisation in days.
Results: Procedural success was achieved in 260 patients (100%), the cross over rate was 10 % in the TR and 1.5% in the TF group (p<0.05). Major access site complication was encountered in 1 patient (0.9%) in the TR and in 1 patient (0.8%) in the TF group (p=ns). The incidence of MACCE was 0.9% in the TR and 0.8% in the TF group (p=ns). Procedure time (1744±742 vs. 1665±744 sec, p=ns) and fluoroscopy time (613±289 vs. 579±285 sec, p=ns) was not significantly different, but the radiation dose was significantly higher in the TR group (223±138 vs. 182±106Gycm2, p<0.05).
Conclusions: The transradial approach for carotide artery stenting has the same efficacy and safety as transfemoral, however the cross over rate and radiation dose is higher and hospitalisation is shorter with transradial access.

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